AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings of claims in the application:

LISTING OF CLAIMS:

1-11 (Cancelled).

12. (New) Complex matrix constituted by at least one biocompatible polymer of natural origin, cross linked with a cross linking agent of a bi- or polyfunctional molecule selected from epoxydes, epihalohydrines and divinylsulfone and on which are grafted chains of molecular weight less than 50,000 Da, selected from polymers of natural origin of small size, preferably cellulosic derivatives or other derivatives of biopolymers not naturally present in the human body and/or non-polymeric chains having antioxidant properties or properties for inhibiting reactions of degradation of said matrix, preferably vitamins, enzymes or molecules comprising one or several cycles, with a quantity of grafting, defined as being the ratio between the number of moles of grafted molecules and the number of moles of units of the polymer, from 10 to 40%.

13. (New) Matrix according to claim 12, in which the biocompatible polymer of natural origin is selected from hyaluronic acid, chondroitine sulfate, keratane, keratane sulfate, heparin, heparin sulfate, cellulose and its derivatives, xanthanes and alginates, proteins, or nucleic acid.

14. (New) Matrix according to claim 12, in which the biocompatible polymer of natural origin is a polymer not naturally present in the human body such as a cellulosic derivative, a xanthane or an alginate which is cross linked with at least one polymer naturally present in the human body selected

from hyaluronic acid, chondroitine sulfate, keratane, keratane sulfate, heparin, heparane sulfate, xanthanes and alginates, proteins or nucleic acids.

15. (New) Matrix according to claim 12, in which the amount of cross linkage, defined as the ratio between the number of moles of the cross linking agent ensuring the linking of the polymer chains and the number of moles of units of the polymer, is comprised between 0.5 and 50%, in particular between 0.5 and 25% in the case of injectable products, and between 25 and 50% in the case of solid products.

16. (New) Matrix according to claim 12, containing antioxidant agents, vitamins and other dispersed pharmacologically active agents.

17. (New) Matrix according to claim 12, containing vitamins or other dispersed pharmacologically active agents.

18. (New) A method to separate, replace, fill or supplement a biological fluid or tissues comprising a step of applying an effective amount of a matrix according to claim 12.

19. (New) Process for the preparation of a partly biodegradable biocompatible matrix constituted by at least one polymer of natural origin, characterized in that it consists in:

- on the one hand grafting small chains of molecular weight lower than 50,000 Da with an amount of grafting of 10 to 40%, the small chains being selected from polymers of natural origin of small size, preferably cellulosic derivatives or derivatives of other biopolymers not naturally present in the human body and/or unpolymerized chains having antioxidant properties or properties of inhibiting reactions of degradation of said matrix, preferably vitamins, enzymes and molecules comprising one or several units,

- on the other hand cross linking the principal chains of the polymer to create a homogeneous matrix, with the help of a cross linking agent which is a bi- or polyfunctional molecule selected from epoxydes, epihalohydrines or divinylsulfone.

20. (NEW) Matrix according to claim 13, in which the biocompatible polymer of natural origin is a polymer not naturally present in the human body such as a cellulosic derivative, a xanthane or an alginate which is cross linked with at least one polymer naturally present in the human body selected from hyaluronic acid, chondroitine sulfate, keratane, keratane sulfate, heparin, heparane sulfate, xanthanes and alginates, proteins or nucleic acids.

21. (NEW) Matrix according to claim 13, in which the amount of cross linkage, defined as the ratio between the number of moles of the cross linking agent ensuring the linking of the polymer chains and the number of moles of units of the polymer, is comprised between 0.5 and 50%, in particular between 0.5 and 25% in the case of injectable products, and between 25 and 50% in the case of solid products.

22. (NEW) Matrix according to claim 14, in which the amount of cross linkage, defined as the ratio between the number of moles of the cross linking agent ensuring the linking of the polymer chains and the number of moles of units of the polymer, is comprised between 0.5 and 50%, in particular between 0.5 and 25% in the case of injectable products, and between 25 and 50% in the case of solid products.

23. (NEW) Matrix according to claim 13, containing antioxidant agents, vitamins and other dispersed pharmacologically active agents.

24. (NEW) Matrix according to claim 14, containing antioxidant agents, vitamins and other dispersed pharmacologically active agents.

25. (NEW) Matrix according to claim 15, containing antioxidant agents, vitamins and other dispersed pharmacologically active agents.

26. (NEW) Matrix according to claim 13, containing vitamins or other dispersed pharmacologically active agents.

27. 16. (NEW) Matrix according to claim 14, containing vitamins or other dispersed pharmacologically active agents.

28. (NEW) Matrix according to claim 15, containing vitamins or other dispersed pharmacologically active agents.

29. (NEW) Matrix according to claim 16, containing vitamins or other dispersed pharmacologically active agents.

30. (NEW) A method to separate, replace, fill or supplement a biological fluid or tissues comprising a step of applying an effective amount of a matrix according to claim 13.

31. (NEW) A method to separate, replace, fill or supplement a biological fluid or tissues comprising a step of applying an effective amount of a matrix according to claim 14.